



Magazine

NOVEMBER 1961





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Contributors

**F. J. Siddle**, joint managing director of Fibres Division, retires at the end of the year. He has been with ICI since leaving Leeds University in 1930, when he joined Dyestuffs Division at Blackley. First became associated with 'Terylene' in 1953. **John Bulmer**, 23-year-old professional freelance photographer, has contributed pictures to "About Town," "The Queen" and a number of American magazines. Was with the "Daily Express" for a year after coming down from Oxford, where he read engineering. **Hazel Moore** joined the staff of the "Magazine" six months ago. Before that she was associate editor of the house newspaper of African Explosives and Chemical Industries at their head office in Johannesburg.

The ICI Magazine, price twopence, is published monthly for the interest of all who work in ICI, and its contents are contributed largely by people in ICI. Edited by Sir Richard Keane, Bt., with the assistance of Mr. Colin Forbes as art editor and Miss Anne Bilsland as news editor, it is printed at The Kynoch Press, Birmingham, and published by Imperial Chemical Industries Limited, Imperial Chemical House, Millbank, London S.W.1 (phone VICtoria 4444). The editor is glad to consider articles and photographs for publication, and payment will be made for those accepted.

Front cover by John R. Tooth (Organic Chemicals, Northern Region). Taken with Super Silette with f2 Solagon lens, 1/50 sec. at f5.6, Wratten A1 filter.

Point of view

The silent revolution, by Mark Abrams



Each autumn the nation's Central Statistical Office publishes a substantial Blue Book entitled "National Income and Expenditure." Its tables and statistics provide economists and statisticians with stimulating and useful information, but each year, with increasing interest, I find myself turning to Table 17. This is concerned with the number of people employed in manufacturing industry, with their earnings and with the sort of work they do. The figures for the past ten years sum up much of the social change that is taking place in present-day Britain.

For example, between 1950 and 1960 the total number of workers in the whole of British manufacturing industry increased by slightly under one million; but of these additional employees only one-third were manual workers and the remaining two-thirds were white-collar workers, i.e. those with clerical, administrative or technical jobs. Within industry there are still many more manual workers than white-collar workers, but the balance between them is changing steadily. Ten

years ago the manpower of an average factory was made up of one white-collar worker for every six manual workers on its payroll; today it apparently needs one white-collar worker for every four manual workers in the factory.

Forgotten Facts

But this is not the whole picture. There are many millions of workers who are employed outside the scope of manufacturing industry. For example, there are those in the distributive trades (shop assistants, wholesalers, etc.), those in banking, insurance and finance, those in public administration (working for both local and central government), those in the professional and scientific services (education, medicine, etc.); and finally there are those who are described in the statistical tables as being employed in the "miscellaneous service" trades—hotels, laundries, entertainment, garages. Today the number of people working in these five groups of non-factory occupations is larger than the number of workers—both manual and white-collar—in the whole of manufacturing industry. And, what is more important, over the past ten years two out of every three people added to the nation's total working population have been absorbed by these five non-industrial occupations.

In effect, then, in post-war Britain there has been a double movement in the way people earn their living: most new workers have gone into non-industrial jobs; secondly, most people who have gone into industry have taken up white-collar jobs.

These employment changes are, I am sure, slowly, but persistently and funda-

mentally, affecting our non-working lives. For example, they largely account for the much greater concern today with higher education, and particularly with technical and professional training. Again, as more and more people work at jobs which are not physically exhausting, home life and family life have taken on a new importance and a new vitality. Compared with a generation ago, people today show a greater interest in their homes, in home ownership, in moving to the suburbs, and in the family "doing things together." In politics one consequence of the shift in jobs is that more and more voters move away from the extremes of both right and left and prefer policies of moderation.

The New Society

Some of these consequences have already happened; there are others we can reasonably expect to emerge over the next few years. One of the more important of them may well be a growing interest by the ordinary man and woman in local matters and local needs—schools, hospitals, town planning, roads, youth clubs, old people's clubs, smoke abatement. In ten or fifteen years' time Britain will have passed almost completely beyond the sort of society typical of the nineteenth century. We shall be solidly in the middle of what can be described as "post-industrial society," a white-collar world. The unhappy misfits then will be the minority of youngish people who, either because they lacked the opportunities or because they failed to look ahead, chose in the 1950s and early 1960s to leave school as early as possible and take up jobs as unskilled or semi-skilled manual workers.

The opinions expressed in this article are not necessarily those of the Company



*'Terylene' finds a new market . . . as a film tougher and crisper than polythene film. 'Melinex' was a difficult child to rear, but today it will do things that polythene won't because it is very strong, is extremely hard to tear and is brightly transparent. ICI can now make 2000 tons of 'Melinex' a year, and it goes into all sorts of surprising things*

*Contributed by Plastics Division*

*I*nset in this *Magazine* is a sheet of clear sparkling film—crisp, transparent, and almost impossible to tear with bare hands. This is ICI's new 'Melinex' film.

Superficially, 'Melinex' film is like a clearer and tougher polythene. It is also much more expensive. Its cost is the direct result of the elaborate processes needed to make it. Basically, 'Melinex' is 'Terylene' in film form. The horny cream-coloured chips of polymer used by Plastics Division as the starting point are exactly the same as those which Fibres Division melts and extrudes through spinnerets to make 'Terylene.'

"After all the complicated chemistry has been done already," you may ask, "where is the difficulty?" The answer is that it has taken nearly seven years of work and large sums of money to solve the problems of turning 'Terylene' polymer into film form.

The first stage of the 'Melinex' process consists of melting the polymer and extruding it as a thick sheet of film. This film is, for all practical purposes, useless. It is brittle and unstable because the molecules are thoroughly "disorganised." To "organise" the structure of the film, scientists turn on the heat. At a temperature of 100° C.

the film begins to crystallise; but it is still weak. The only way to strengthen it is to regiment the crystals still further, and this is done by heating the film again and then stretching it—both sideways and lengthways. In the process, the film becomes three times as long and as broad as before and one-tenth as thick; but—most important of all—it also becomes many times stronger.

The two-way stretching techniques take the tensile strength of the film up from about 7000 lb. per square inch to 22,000 lb. per square inch. But even this treatment is not enough. The film is still commercially useless, tending to shrink or cockle at the least excuse. Yet another application of heat is needed, while the film is still under tension, to heat-set it in its new structure. It will then finally remain stable under widely varying conditions of temperature and humidity.

A great deal of the work that went into perfecting these processes broke new ground. The Plastics Division chemists, physicists and engineers involved in the project found that their experience with such films as polythene was of little help; most of the standard film-making machinery was quite inadequate for the job, and completely new equipment had to be designed and built. Ways had to be found to keep the two-way stretched film free of the defects that could so easily creep in at any point during the process, and of controlling the thickness to within one-tenth of a thousandth of an inch.

*With a strength to the inch  
20,000 lb. plus,  
'Melinex' film  
Could lift a big bus.*

*But because our own crane  
Wouldn't take such a strain,  
This small Mini-Minor car  
Made do for us.*





The first experimental unit was built in 1953, followed by a second in 1955 and by a pioneer production plant in 1956; modifications to plant and processes went on more or less continuously as experience increased. Now, at a new plant at Dumfries, 2000 tons or more of 'Melinex' can be produced every year.

The electrical industry is the largest single customer for 'Melinex' today. Because the film is very thin yet very strong (sometimes as thin as one-quarter of a thousandth of an inch), because it has excellent electrical resistance and stands up well to moisture, heat or cold, 'Melinex' has been a godsend to the manufacturers of electrical gear of all kinds, both large and small. It has enabled engineers to build much smaller electric motors, for their rating, than ever before, and much smaller condensers than are traditional for a given voltage. In all kinds of electric components it saves space, and in cables it is used for its strength and as a barrier against heat and chemical attack.

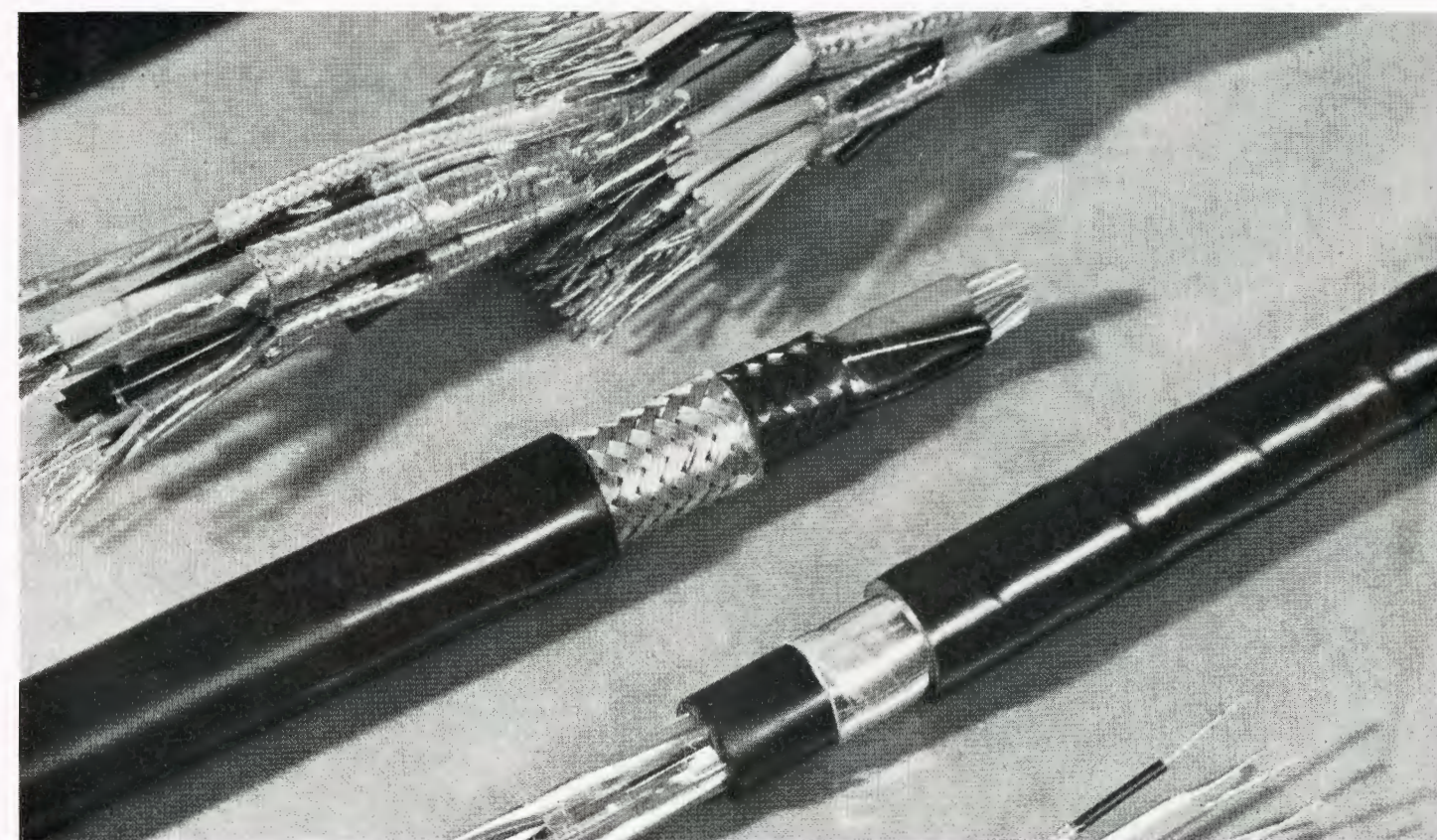
As a base for magnetic recording tape 'Melinex' has many advantages. Not the least is its strength, which means that it can be made thinner than the normal base and so give more playing per reel.

Toughness, dimensional stability and transparency are qualities that have won 'Melinex' many markets in the industrial field. If 'Melinex' is roughened it can be written on with pen or pencil; if, in addition, it is photosensitised,

drawings made on it can be photocopied. Thus it is of interest for drawing offices and for map-making. It is also used in such diverse applications as typewriter ribbons; as a protection for the covers of books or magazines; for drum heads; in pump and valve diaphragms, washers and gaskets; for covering acoustic tiles; and as a release agent in the production of polyester glassfibre sheets.

'Melinex' can also be "vacuum metallised" with aluminium to give a highly lustrous, non-tarnishing surface. This result is achieved by passing a strip of 'Melinex' film through a vacuum chamber in which finely powdered aluminium is released. The aluminium attaches itself to the surface of the film, which becomes coated with the metal, usually only on one side. Metallised 'Melinex' has a number of decorative uses; when split into narrow widths it becomes a thread looking like a textile; it can be used as tinsel and will make artificial Christmas trees; and it will laminate to p.v.c. leathercloth for making handbags, shoes and flexible car panels.

Last but not least, 'Melinex' finds its way into specialised packaging. When laminated with polythene it is used for "boil-in-the-bag"; for packaging coffee; and for the packaging of bony fish. It is used for covering the cap wad in bottle tops, particularly gin and whisky. And it is useful to the housewife for wrapping round joints of meat and poultry in the oven and thus keeping the oven clean.



OPPOSITE: In large electric motors, such as this 400 hp effort under construction, 'Melinex' is used as a liner to prevent the wiring coming into contact with the metal

ABOVE: 'Melinex' is incorporated in cables of various types such as this twin-core screened power cable, where it keeps the cores from sticking to the sheath

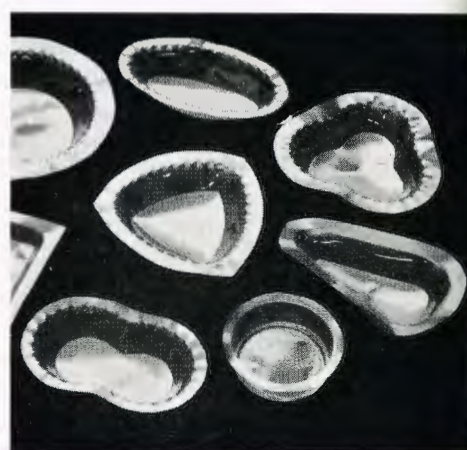




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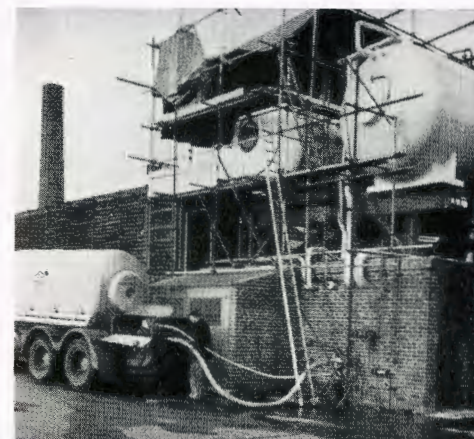
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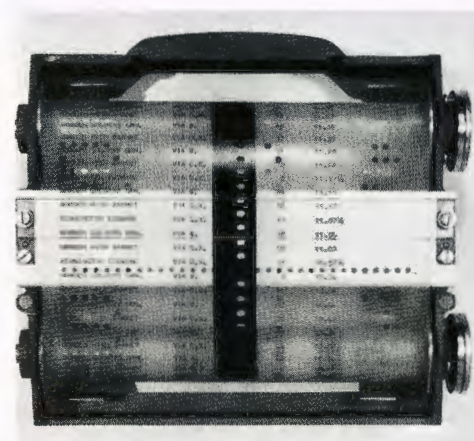
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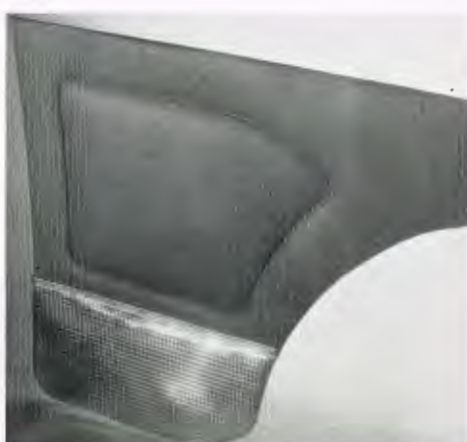
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16

## The varied uses of 'Melinex'

1 Weatherproof loudspeaker unit and diaphragm incorporating 'Melinex' film. 2 Metallised 'Melinex,' in other words film with a coating of aluminium powder, can be laminated to pegboard. This gives a bright, washable surface which is both practical and decorative. 3 Pressure-formed 'Melinex' film makes useful containers for anything from chocolates to toilet goods. 4 Book jackets laminated with 'Melinex' remain untarnished and don't tear. 5 'Melinex' applied to the back of acoustic tiles (as at Birmingham Airport's terminal building) acts as a dust barrier. 6 To seal bottles, 'Melinex' is laminated to cap liners. 7 Because of its stability, 'Melinex' gives a consistent tone when used as a drum head. 8 Hoses made of 'Melinex' and 'Terylene' remain flexible at temperatures of  $-170^{\circ}\text{C}$  when conveying liquid gases. 9 The confectioner's name is printed on the under surface of chocolate by means of embossed, washable 'Melinex' film. 10 In drawing offices 'Permatrace,' based on 'Melinex,' is used to make scale drawings. Sections of an aircraft are here being drawn to full scale. 11 'Melinex' film can make a thinner-than-normal base for magnetic recording tape and so give more playing per reel. 12 This completely automatic signalling machine developed by London Transport engineers incorporates a programme roll made of 'Melinex.' 13 When coated under vacuum with aluminium powder, 'Melinex' has a lustrous, non-tarnishing surface, often used for tinsel and similar decorations. 14 Coated with aluminium powder and embossed, 'Melinex' is used on the bottom of car door panels, where an essential requirement is ability to withstand rough treatment. 15 A better standard of typing and keys free from ink result from using typewriter ribbons based on 'Melinex.' 16 'Lurex,' a non-tarnishing metallised yarn based on 'Melinex,' adds glamour to fabrics. It is incorporated in many of this season's evening and cocktail fashions.

## Breakdown of 'Melinex' consumption

Recording tapes	Audio Video Data	10%
Metallising	Decorations Stamping foil Yarns	20%
Electrical	Slot liners Cable lapping Capacitors Transformers General insulation	30%
Drawing office	Drafting films Printing	20%
Miscellaneous	Laminates with other plastics Laminates with metal foils Laminates with paper Adhesive tapes Loudspeaker diaphragms Typewriter ribbons Hoses Polyester resin/glassfibre release Acoustic tiles Printed circuits Collar stiffeners Conveyor belts Book coverings Drum skins Thermal insulation	20%



How wet! was the comment of one exhibitor. But the facts are that more schools want to see more ICI films, particularly valued for the instruction of large classes.

## Schools ask to see more ICI films

By Gordon Begg, ICI Films Officer

For fifteen years the ICI Film Library has been distributing films to different sorts of audiences all over the world. One section of borrowers, which has always been the biggest and is certainly one of the most important, is formed by educational establishments—schools, colleges, universities, etc. In this article I shall, for brevity's sake, refer to them all as schools, although this will not include centres of medical teaching, which form another of our audience groups.

### Decisive Demand

Do schoolmasters want films to help them teach? Although twenty-five years ago there would have been some doubt about the answer and, in addition, it would have been pointed out that few schools then had the means of showing films, I think today the reply is a resounding "Yes!" During the spring term of 1961, a period of 8–9 weeks, over 6000 copies of our films went out on loan to schools. The Film Library's mailing list includes 4480 schools of every description, and of these 3200 actually borrowed films during 1960. The mailing list grows steadily and the demand for our films rather more rapidly, particularly as more new films are added to the list. The 1960 catalogue lists 23 schools films, although dozens of films from other sections such as "Films about ICI" are also borrowed by schools. In next year's catalogue five or six new schools films will be added, and if this rate of production is kept up, ICI will be well in the van of industrial providers of films for schools.

### Advisory Panel

What sort of films do we make? We try to provide visual aids to the teaching of science. We are helped by an advisory panel from the Science Masters Association, representing both private and state schools. The panel advises us on the type of film likely to be most useful to schools and also provides us with collaborators in the production of films on any particular subject. Roughly speaking, our films fall into two main categories, (1) the classroom film and (2) the science society film. The former is an aid to teaching science within the established curricula and is intended to be shown in school time as an integral part of lessons. Films of this sort tend to be geared to the bright 16–18-year-old mind. The latter is more of a background film. The subject may well be outside the syllabus required for the O or A level examinations, but it will be on some aspect of science about which it is felt boys and girls should know something. In this category the age-group aimed at is usually much wider, and such films might well interest arts students as well as embryo scientists. Typical of category (1) are *Filtration* and *Small Scale Analysis*, while the type of background film that is proving



The ICI Film Unit in action

popular is *Refrigeration*, which, as well as being informative, is not devoid of entertainment value.

Do schools like the films we make, and is the fact that we make them at all appreciated? Perhaps it is of value to hear from the borrowers themselves. Each film that goes out on loan (and it should be explained that there is no charge, borrowers merely pay for returning the film) includes a questionnaire inviting comments on the films and asking for audience reactions. Nearly 70% of these are completed and returned, and we find them very salutary indeed. A teacher at a technical high school in Yorkshire said of *Filtration*: "An excellent film in every way. It fits in admirably with the work done in this type of school." The senior science master at a Wigan grammar school thought *Distillation* the finest educational film he had seen and wanted to borrow it at regular intervals. From a grammar school at Ellesmere Port comes "Admirably produced. We do appreciate this service," and from a girls' high school in Stockport a very relevant comment: "I welcome all such aids to teaching large classes." There is little doubt that while the film referred to, *How to Use a Burette*, might not be considered of great value in a small class at a public school, at the school in question, where thirty-eight girls strive to see the meniscus, the huge close-ups of a film prove invaluable. Not all the questionnaires are so complimentary. A certain Mr. Jones from a Sussex grammar school, who described himself as "projectionist," said of one of our films that the audience was not very interested and the commentary was childish. For good

measure he added "How wet!" But the real answer to whether or not we are giving the schools the tools they need are the borrowing figures and the fact that so many schools use them term after term.

Since 1957, when we started making schools films guided by our panel, we have experimented with several types of film. Some have merely dealt with one aspect of chemistry teaching and have sought to show a technique carried out at its best and presented in a series of lucid images. Others, like *Filtration* and *Crystallisation*, have shown familiar school laboratory processes in relation to the same processes on the scale of industrial production. Others again, like *Radioactivity*, provide a definitive exposé of subjects which are difficult or impossible for the schoolmasters to put over. Finally, a series of short 10–15-minute films based on individual chemicals which are ICI products is being produced which, our panel indicates, should be in great demand.

Our primary aim is to give to schools films on scientific subjects which will be useful to them. This objective we hope we have achieved. These films are part of Company public relations. The school authorities know this and are undoubtedly grateful for them. The many thousand senior boys and girls who see them yearly retain a visual impression of the ICI roundel at the beginning and end of each film. If we can also, by showing ICI processes, plant and people in these films, attract promising young men and women to work for the Company, our schools films programme will indeed have been worth while.

A scene from the film "How to use a Burette"



All the time the list of ICI retail products is steadily growing. There are new styles, new colours, completely new products. And that's where this Shopping Guide comes in—to bring you up to date on what's new in ICI products you can buy over the counter. In this issue we tell you about unbreakable toys of 'Propathene' (the ICI brand of polypropylene), a new 'Vynide' pattern, the Ilford Sporti-4 camera and flash outfit, a pint-size pvc-bonded carpet sweeper, an unbreakable 'Perspex' washbasin, and the latest fashions in 'Terylene.'

## AUTUMN SHOPPING GUIDE

by Hazel Moore



ABOVE: Taking photographs indoors is inexpensive with the Ilford Sporti-4 camera and flash outfit. Costing £4 5s. 6d., the outfit consists of a Sporti-4 camera, Sportilux flashgun complete with case and battery, two 127 Selochrome films and a packet of five PF1 flashbulbs.

LEFT: The "little black dress" made in a new fabric—'Terylene' silk, with a durably pleated skirt that can be washed by hand. Also in almond green, geranium pink, sea blue and honey. Costs around nine guineas.

BELOW: A pint-size carpet sweeper for sweeping up crumbs. It has a sectional handle for storage in confined spaces. Covered with durable 'Novon' ten, pvc bonded to metal produced by ICI (Hyde). Ideal for caravans or boats, in red or blue. Costs £2 9s. 6d.



LEFT: Give your bathroom or bedroom a touch of extra glamour with a combined wash basin and dressing table in pastel pink 'Perspex' which won't chip or stain. Walnut brown wooden doors cover roomy storage cupboards, and the wide top gives plenty of room for cosmetics and toilet articles. Cost: about £24.

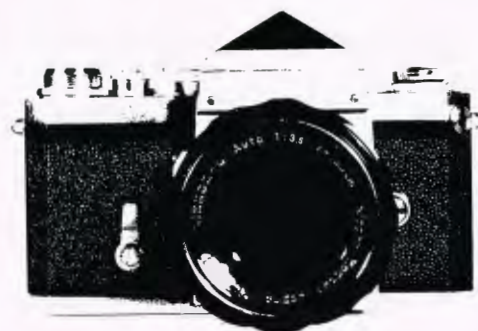


ABOVE: Newest material for luggage is pvc-coated 'Terylene' fabric—very strong and very tear-proof. It is also extremely light and easy to clean—just wash it down with soap and water. This vanity case costs about £5 12s. 6d.

CENTRE, LEFT: Addition to G-plan furniture is this table covered in 'Vulkide,' a new type of sheet fabric developed by ICI (Hyde). The surface doesn't stain or scratch except under great provocation. Available in black or golden tan. Cost £9 15s. The chairs, upholstered in 'Vynide' new tapestry pattern, are retailed at £5 14s.

BOTTOM, LEFT: Colourful, unbreakable toys of ICI's 'Alkathene' and 'Propathene.' The nursery train costs about 23s. 10d. and the engine that takes to pieces costs about 9s. At the back of the table is a take-to-pieces Noah's ark costing about 16s.





The *Magazine* takes a look at  
**BILLINGHAM**  
**DIVISION COUNCIL**

At the last meeting of Billingham Division Council (holding its 70th meeting, as against the 66th meeting of Alkali Division Council, the runner up in numbers of meetings) the Editor was asked to talk about the *Magazine*. He took along with him photographer John Bulmer, who produced these studies of concentration on consultation.



TOP, LEFT: Early morning rendezvous for the workers' pre-meeting. In the background is Billingham Division's new office block

BOTTOM, LEFT: The workers pre-meeting, at which differences of opinion are aired. **Mr. E. Hutton**, Chairman of the Workers' Representatives and Workers' Chairman at the last Central Council, is in the centre facing the camera, counting the show of hands

RIGHT: Division Council as seen from the gallery. Workers' representatives side by side with management representatives and a sprinkling of directors sit flanking the walls of the theatre in the Synthonia Club. The Division Chairman faces the two lines. There is no platform as at Central Council







TOP, LEFT: The Council in session. **Mr. P. Burke**, Gas and Power Workers' representative, sits between two management representatives, **Mr. J. B. Gibson** (*nearest camera*) and **Mr. J. M. Boycott**

TOP, RIGHT: **Mr. Walter d'Leny**, Chairman of Billingham Division, listens intently as a case is argued

BOTTOM, LEFT: **Mr. W. H. Mitchell**, representative of the site tradesmen's council

BOTTOM, RIGHT: **Sir Richard Keane**, Editor of the *Magazine*, and **Mr. E. A. Blench**, Billingham Production Director



# People and events . . .

## Exports Up, Profits Down

THE announcement of the half-year results and the interim dividend of rs. 6d. gained considerable publicity throughout the national press on 29th September. Opinion was divided between surprise that the results were not better and surprise that they were not worse.

Among those who regarded them with fair equanimity were the *Financial Times*, *The Times*, the *Guardian* and the *Daily Herald*. "Lex" in the *Financial Times* commented that "compared with the exceptionally good first half of 1960 the results were poor. Compared with the second half they are reasonably satisfactory, and if one takes account of the competition and price-cutting from which the industry is suffering, they are very satisfactory. The overall physical volume of sales appears to have been a new record, and money sales at £287 million are only £1 million less than in the first half of 1960 and £17 million more than in the second half."

*The Times* remarked that stock markets were dominated by the ICI interim figures. "They proved less depressing than had been feared." After giving the group figures the city editor said: "It is worth recording that the latest figures look much more cheerful when set against those for the second half of last year. Looking ahead, this augurs well for the profit outlook when the present conditions of over supply and credit restrictions have ended." "Mercury" of the *Guardian* thought it gratifying that "sales in the home market in the first half of this year were only 2½% below the same period in 1960, and this was due solely to lower selling prices." The *Daily Herald* commented: "A striking fact about the half-year's results of Imperial Chemical Industries, which had been awaited with suitable awe for the past few days, was that they made no particular mark on a rather nervous stock market. Perhaps that is because the news was both good and bad. Total

sales were £1 million lower at £287 million, yet this chemical giant has certainly stepped up its exports."

More pessimistic papers were the *Daily Telegraph*, the *Daily Mail* and the *Daily Express*. The *Daily Telegraph* said: "City fears that the half-yearly results of Imperial Chemical Industries would bring fresh evidence of pressure on profit margins were fully confirmed yesterday. ICI's results had a subduing influence on an already depressed equity market."

The *Daily Mail* went as far as suggesting in their headline "ICI final may have to be cut." This, according to their city editor, "is what some of the city pro-

fessionals were saying last night after reading the poor results and trying to guess how ICI are doing now. Our largest industrial company has not reduced dividends since 1938, but analysts ask: 'How can ICI earn enough this half-year to justify a final dividend of rs. 6d. (7½%) when their profits did so poorly in January/June, which, remember, was before the July squeeze?' " Frederick Ellis, writing in the *Daily Express*, said: "They came as most expected—the ICI results, with profits of the chemical giant down £13,500,000 to a still mighty £36,700,000. The results unnerved the market, although depressing results had been widely forecast from ICI. For although the half-year sales fell only a million to £287,000,000 the profit is well down. Clearly, profit margins have been clipped. ICI is basic British industry, and if ICI is doing not so well then you can be sure the rest of the British industry is feeling the pinch."

### Group Profit and Loss Account of Imperial Chemical Industries Limited and its subsidiaries at home and overseas for the half-year ended 30th June 1961

First Half 1960	Year 1960		First Half 1961
£ millions	£ millions		£ millions
288	558	Group sales to customers at home and abroad	287
50.2	88.0	Group income before taxation and after charging depreciation*	36.7
23.0	40.4	Less: Taxation	16.3
27.2	47.6	Group income after taxation	20.4
1.5	2.4	Less: Applicable to minority members of subsidiaries	1.2
25.7	45.2	Group income after taxation applicable to Imperial Chemical Industries	19.2

\* Depreciation was: First Half 1960 £m. 17.9; Year 1960 £m. 37.3; First Half 1961: £m. 19.3

## Progress at Rotterdam

SINCE ICI's intentions to manufacture there were announced earlier this year, a good deal of work has been done on the new 300 acre site at Rozenburg, near Rotterdam. Before the land in this port area can be developed for industrial purposes, the Rotterdam Port Authority have first to raise it to the level of the surrounding dykes. This does not mean that the site is at present under water, though it is below sea level, as is a large part of Holland, including Schipol Airport. Of the ICI site, all but 64 acres, the part now being raised for the first plants, is still being farmed.



Ir. A. van Namen

The method of raising the land level is a fascinating one, and simple enough to the Dutch with their centuries of hard-won know-how. A mixture of sand and water is pumped through pipelines into the area to be filled and the water drained off, leaving terra firma behind it. The plants, like all buildings in the Rotterdam area, are then erected on concrete piles driven deep into the sandy soil. The site, now christened the Rozenburg Works from the name of the nearby village, will begin to justify the designation Works when construction of the first plants and services begins early next year.

A Dutch general manager has now been appointed for Rozenburg Works. He is **Ir. A. van Namen**, a chemical engineering graduate of the famous Delft University. Apart from a valuable background of plant design, construction and management, he brings to his new job just the right kind of experience, for with his previous employer he was associated with the development of another site in the Port Area, with setting up the right organisation to run it and with getting the plants into operation. He has an even more exciting and challenging time before him.

## Board Changes

**Dr. John Ferguson**, ICI research and development director, is retiring from the Board on 30th November after 33 years' service. A tribute by **Dr. Ronald Holroyd**, one of ICI's deputy chairmen, appears on page 382.

**Dr. Alfred Caress** has been appointed research and development director with effect on and from 1st December in addition to his present appointment as an overseas director.

## From Sixth to Second

ON 19th September Imperial Chemical Industries of Australia and New Zealand announced a new issue of £A1 ordinary shares to be offered in the first instance to registered stockholders. The money raised will exceed £A8½ million, and it will be used to finance the expenditure on plant and buildings involved in current expansion plans.

This new rights issue follows close on the bonus issue last June designed to bring the company's issued capital more into line with the value of assets employed in the business and which raised ICIANZ capital by £A7,290,000 to £A25,300,000. The new issue will raise paid-up capital to about £A33 million, which means that ICIANZ is now second in the rank of Australian companies in terms of issued capital, exceeded only by Broken Hill Proprietary, the famous iron and steel organisation. Previously it was sixth.

ICIANZ projects on hand, in addition to extensions of existing plants, are:

**Ammonia-methanol plant, Botany.** An £A6 million project. When completed it will bring ICIANZ investment at Botany to over £22 million. The new plant will produce ammonia for industrial purposes, ammonium nitrate for commercial explosives, methanol, nitric acid which is required for the plant's own processes, and urea for fertilizers and for use in industry.

**Pigments Plant, Laverton.** ICIANZ's first manufacturing venture in the dye-stuffs field, costing £A1.5 million.

## Sentimental Journey

THE ammonia process, which has made Billingham famous the world over, had its first success at Runcorn in 1921. From among the pioneers of the experimental Runcorn ammonia unit a team of men was sent to Billingham to start up a second unit—long since dismantled—which laid the foundation of the factory's operations. Over the years most of the team have retired or died, but two men who were on the Runcorn plant at the start-up are still at Billingham, and there is a third who was there soon after. The

two are **Mr. Bill Broomfield**, who is in the analytical section of the Research Department, and **Mr. Arnold Thomas**, a shift superintendent on the 'Drikold' Plant. The third man is **Mr. Joe Vernon**, a section manager in Commercial Works.

A few weeks ago the three men embarked on a sentimental journey. They returned to Runcorn for the first time in 40 years to see Billingham's tiny ancestor, which is still at work.

It was the 1914-18 wartime situation which led to the Government decision to make ammonia in this country. One of the main reasons for starting at Runcorn was that a surplus of very pure hydrogen was available from chemical operations which



Left to right: Mr. Bill Broomfield, Mr. Arnold Thomas and Mr. Joe Vernon

Castner-Kellner Works had been carrying on for many years. The sum of £30,000—a large sum in 1920—was voted for the experiment, which, it was stipulated, had to produce results before the Billingham plan would be allowed to go ahead. The original planned output was just over a ton of ammonia a day. Since then many improvements have been made, though in size and principle the plant is much the same, and output is now 15 tons a day.

## Salt Man's Choice

LISTENERS to the BBC's popular "Down Your Way" programme on Sunday, 1st October, heard Franklyn Engelman interview **Mr. Winston May**, the process manager of Alkali Division's Salt Works at Stoke Prior, Worcestershire.

The previous week the "Down Your Way" unit had been visiting the Bromsgrove area recording interviews. They called in at Stoke Works, where Mr. May briefly described how brine was pumped up from the local rock salt deposits, purified, and evaporated to produce salt for distribution to customers.

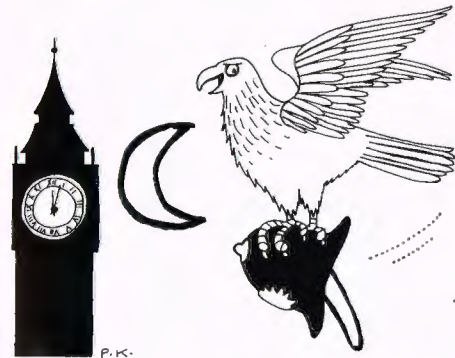
Asked to choose a piece of music, he requested a selection of salty sea shanties.



## Ornithologist's View

OUR article on pigeon racing in the September *Magazine* has called forth a protest from **Mr. B. J. W. Winterbotham**, a member of the Head Office Legal Department. As a keen ornithologist he objects to the statement that the peregrine is the pigeon's worst enemy. Ornithologists consider this to be nonsense and are busy fighting the pigeon breeders' current campaign to get the bird removed from the protected list.

The total peregrine population of the British Isles is thought to be as little as 1000-1500 all told, the great majority of which is found in the Scottish highlands. The pigeon fanciers allege that of the 500,000 racing pigeons lost each year, 100,000 are lost to peregrines, a figure arrived at by dividing the total losses equally between the five known major causes of loss. Even if these extravagant



claims are accepted, the relatively few peregrines which are to be found on the pigeon racing routes would have to display enormous appetites, considering their principal diet is known to consist of woodpigeons, stock doves, rock doves and jackdaws.

Peregrines are found mainly in Scotland and the West Country, but occasionally in winter some are spotted in the south. Last winter Mr. Winterbotham had the rare good fortune to spot one in Westminster, not just once but on several occasions. It was later discovered dead on the roof of the House of Commons, when it was found to have jesses and bells on its legs—which showed it to be an escaped trained falcon belonging to a falconer.

The dead bird cleared up a mystery for one Parliamentary policeman, who was rather shaken to hear the sound of bells being wafted through the air while on late night duty on the terrace of the Houses of Parliament.

## In Brief

**Clean Air Council.** Dr. P. W. Reynolds, Billingham Division technical manager, is one of five new members appointed to the Clean Air Council. With five re-elected members they will serve until April 1964.

**Multi-millionaires.** Alkali Division's Winnington Works recently completed one million accident-free hours for the fifteenth time. The only other Works to have achieved a higher figure is Dyestuffs Division's Huddersfield Works, who have done it eighteen times.

**Narrow escape.** A Fibres Division representative had a narrow escape from serious injury recently. She had stopped her car behind a lorry when a bus ran into the back of her and shunted her car into the vehicle in front. Although badly shaken and bruised, she escaped serious injury. The reason? She was wearing a 'Terylene' safety harness, which absorbed most of the shock.

**Hat trick.** First prize for the best garden in the south end of Kilwinning has gone again this year to Mr. Alex Morrison (Nobel Division). The judges' award made it three in a row for Mr. Morrison, for he also won the first prize in 1959 and 1960.

**Record catch.** The *Lord Nelson*, Britain's newest and largest trawler, returned to Hull last month from her first fishing trip. On her five-week voyage to the Icelandic waters around the Bear Island fishing grounds she caught a record 48,000 stone of fish. This is twice the normal amount usually landed by any one ship, so the *Lord Nelson's* 'Terylene' fishing nets seem to be serving her well.

**Photographer's award.** Mr. Colin Kitchen, the ICI (Hyde) photographer, has been elected an associate of the Royal Photographic Society.

**Royal invitation.** Dr. R. R. Pritchard (Dyestuffs Division) and his wife were among guests at a recent Buckingham Palace garden party. Dr. Pritchard is a senior instructor in the Huddersfield Division of the Civil Defence Corps, chairman of the Huddersfield section of the

Royal Institute of Chemistry and a member of the Yorkshire Council for Further Education.

**Busman's holiday.** Mr. Harry Hosker, fire officer at Dyestuffs Division's Blackley Works, found himself fire-fighting even on holiday. He noticed smoke pouring from a neighbour's kitchen—a chip pan left unattended on the electric cooker had caught fire and set light to the curtains and woodwork. By the time the fire brigade arrived, Mr. Hosker had the fire safely under control.

**Photographers' success.** Wilton Camera Club was placed second out of 21 clubs competing for the Corder Trophy in the advanced section of this year's Northern Counties Photographic Federation annual print competition. Two of the Wilton prints (by Mr. Stan Walton and Mr. Harold Scott) have been retained by the Federation for exhibition.

**Scouting post.** Mr. Donald Mann, who last year retired from Nobel Division's Ardeer Factory, has been appointed assistant commissioner for handicapped scouts in north-west Ayrshire.

**Union gift.** Mr. James Fisher (Nobel Division) has retired after 12 years as secretary of the Stevenston branch of the AEU. In appreciation of his work he was presented with a transistor radio set. The presentation was made by Mr. William Small, MP for Scotstoun and himself a former Ardeer employee.

**County bowls title.** Mr. Les Davis, secretary of the Billingham Synthonia Bowls Section, beat Mr. G. Newton, secretary of Owton Lodge (Hartlepool) BC, in the final of the Durham Secretaries' knock-out competition on 22nd September. He is the first Synthonia secretary to win the title.

**Gold donor.** Mr. Alan Varley (Fibres Division) has been awarded his gold donor award by the National Blood Transfusion Service. This is in recognition of his contribution of 50 pints of blood to the service.

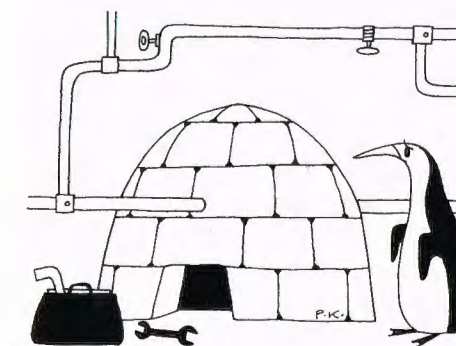
growing at Kew. The others have had to be collected from plantations in Malaya, moistly wrapped in polythene and put straight on a jet airliner for England. On arrival at London Airport immediate clearance is given by the customs, and a member of the Head Office transport staff rushes the plants to the tropical houses at Kew, where they can be painted by our artist. (The plants have to go to Kew to comply with the strict quarantine regulations.)

It is also required to show the seedlings on the chart, and Plant Protection are planning to grow these themselves in the hothouses at Fernhurst from seeds now being sought by ICI (Malaya).

## Paradoxical Process

MENTION of frozen water pipes usually calls to mind the much-dreaded bursts that occur in winter and the floods that come with the thaw. But, strange as it may seem, Billingham Division advocates freezing as a method for the repair of water pipes, the product recommended for use in this paradoxical process being 'Drikold'—ICI's brand of solid carbon dioxide.

Because of its very low temperature (minus 110° F.), 'Drikold' has many uses as a refrigerant. One of these is to freeze water in service pipes so that ice plugs are formed that stop the flow of water and allow valves and pipes to be repaired with the least possible interruption of water supply to consumers. When 'Drikold' is not used, the absence of stopcocks often means that a large area has to be deprived of water while a repair is being made at one point. 'Drikold'



overcomes this inconvenience by providing what is in effect a portable stopcock that can be placed close to the point of repair.

The method is simple and inexpensive—a few pounds of crushed 'Drikold' packed round a service pipe will freeze static water in a few minutes. It can also be used with larger pipes and, in certain circumstances, with flowing water, but in these cases 'Drikold' is used together with HOC Division's isopropanol, a liquid that improves the rate of cooling of the pipe.

Why doesn't the formation of the ice plug burst the pipe? The bursts that occur in frosty weather take place when water is trapped between ice plugs formed at exposed positions, subsequent freezing of the trapped water causing expansion that can only be relieved by the distension and perhaps bursting of the pipe. In the 'Drikold' method these conditions don't arise.

Recently the method has been extended to the repair of oil pipes, and it

has been used successfully with fuel and bunker oils in pipes up to 12 in. in diameter. When cooled, these oils thicken sufficiently to form plugs that will withstand all normal oil pressures.

## Chrysanthemum Expert

At the recent National Chrysanthemum Society Show in London **Mr. Alec Seary**, who works in the filling section of Slough Paint Department, carried off the Crick Cup, one of the most coveted horticultural awards in the country, as well as winning a silver medal and other prizes.



Mr. Alec Seary

Mr. Seary moved to Slough about four years ago. Previously he lived in Kent, where he joined a local chrysanthemum society sixteen years ago. That was the start of an interest which has not only given him an immense amount of pleasure but has taken him to the top among growers of these beautiful flowers.

His hobby takes up every minute of his spare time. He has some 350 plants to attend to, from which he grows up to 1000 blooms, all requiring individual attention. They are protected from the elements by paper or polythene bags, and each bloom requires to be carefully prepared for show. Fortunately his wife has green fingers too and helps him with this delicate task.

The National Chrysanthemum Society Show was the culmination of a highly successful year for Mr. Seary. Earlier, at Slough, he won the blue ribbon for the best exhibit in the show. At Maidenhead he took the Members' Cup for the best exhibit and at Southall not only first prize in the open championship but awards for the best bloom and the best vases of both reflexed and incurved varieties.

## Appointments

Some recent appointments in ICI are: **Alkali Division:** Mr. W. E. Allen, an Assistant Accountant (in addition to Mr. W. G. Ashley).

**Billingham Division:** Mr. D. H. Henderson, Assistant Secretary. **Head Office:** Dr. A. Caress, Research and Development Director (in addition to his duties as an Overseas Director); Mr. B. P. Mould, Assistant Registrar (in addition to Mr. L. J. Holmes). **Scottish Agricultural Industries Ltd.:** Mr. R. A. Hamilton, Director (in addition to his duties as Billingham Division Development Director). **Imperial Chemical Industries of Australia and New Zealand:** Mr. A. W. Hamer, Managing Director of Commonwealth Fertilisers and Chemicals Ltd.; Mr. F. A. St. Hill, General Manager of BALM Paints (Pty) Ltd. SA; Mr. T. B. Swanson, Operations Director (in addition to his duties as Commercial Director).

## Retirements

**Head Office:** Dr. J. Ferguson, Research and Development Director (retiring 30th November).

## 50 Years' Service

The following employees have completed 50 years with the Company. **Alkali Division:** Mr. H. Bracegirdle, Winsford Salt Works (19th October); Mr. J. Butterworth, Lostock Works (20th October).

## Obituary

**Mr. Leonard Gale**  
Mr. Leonard Gale, former personnel director of Nobel Division, died on 2nd October in a Yorkshire hospital. He had been ill for some months.

Dr. J. M. Holm, chairman of Nobel Division, writes:

The death of Leonard Gale is felt with a sense of deep personal loss by the hundreds of friends in ICI and in the country who met and knew him during the last thirty years, when he was concerned with industry's personnel problems. From 1930, when he first became labour manager of the Explosives Group, later to be known as Nobel Division, until June 1955, when he retired after having been Nobel Division personnel director for nearly four years, he gained the respect of all with whom he came in contact, and he profoundly contributed to the healthy labour relations in Nobel Division and the Company as a whole.

He brought to a difficult task outstanding qualities of mind and character. He understood men, was sympathetic in his dealings with them, and was just in his judgments. In consequence his opinions carried weight, and his advice, often sought, was generously given and valued, because it was based on the experience of a perceptive and sympathetic man.

During the first world war he attained the rank of major in the East Yorkshire Regiment, and he gained the Military Cross. In the second world war he was Officer Commanding the 8th (Ardeer) Battalion, the Ayrshire Home Guard, with the rank of colonel. And it was as Colonel Gale that he was best known in the Nobel Division.

He took great interest in the affairs of the Institute of Personnel Management, of which he was first a vice-president, then president. His years of retirement from the Company were not inactive, because his public interest and special abilities were exercised on behalf of Ayr County Council, of which he was a member from 1955 until 1960. In 1958 the Secretary of State for Scotland appointed him a member of the Western Regional Hospital Board, and as convener of the Establishment Committee his exemplary judgment and understanding of men were of great value.

He will be greatly missed by his many friends in the Company.



## Dr. Ferguson retires

On 30th November ICI will bid a reluctant farewell to its research and development director, Dr. John Ferguson, who retires at the age of 62 after 33 years' service. Dr. Ronald Holroyd, one of ICI's deputy chairmen, contributes this tribute.



A Scot by birth, Dr. Ferguson received his basic technical education at Glasgow Royal Technical College and Glasgow University, leaving in 1924 with a BSc. degree with special honours in Chemistry and a PhD. For the next four years he carried out physical chemical research on behalf of the Department of Scientific and Industrial Research, firstly at Bristol University and later at Oxford. At Oxford he was attached to St. John's College and worked with Dr. M. P. Applebey (later research director of Billingham Division), thereby unwittingly placing himself at one of the main concentration points of ICI recruitment. Sure enough, he was persuaded by Kenneth Gordon to join ICI at Billingham in October 1928.

It is interesting to note that the new recruit's first assignment was to develop a practical process for the production of acetylene from hydrocarbons, a problem which, in the event, was not solved until the early forties, and then by a German team. Dr. Ferguson must have wondered from time to time whether he would have beaten them to it if he had not been switched to other researches, mainly in the inorganic field now associated with the General Chemicals Division.

In 1932 Dr. Ferguson left Billingham for Widnes, and later he was in charge of the Laboratory at Runcorn. There, arising out of pest control investigations and encouraged by the then

Dr. Fleck, he first became interested in the relation between the chemical constitution and the biological properties of chemical substances, an interest which was to prove most significant.

With World War II looming ahead, Dr. Ferguson became involved in defence matters. He played an important part in the creation of mustard gas production facilities, and for a time was seconded to the Ministry of Supply as Principal Technical Adviser for Chemical Defence. Dr. Ferguson became a delegate director of the General Chemicals Division in 1939 and was for some time in charge of work on uranium production.

In September 1942 Dr. Ferguson was transferred to Alkali Division as research director and succeeded in doing something which nearly every Divisional research director has wanted to do but never successfully achieved. He insisted on carrying out his own personal research as a sideline, the subject being the relation of chemical composition with biological properties.

Dr. Ferguson returned to General Chemicals Division as its research director in 1950 and a year afterwards was promoted to technical managing director. This period from 1950 to his appointment to the ICI Board in 1957 was probably the most exciting of his career. He was able to follow up, in conjunction with Pharmaceuticals Division, his idea that a chemically inert fluorinated hydrocarbon ought to be a good anaesthetic. The result was 'Fluothane,' one of ICI's most valuable scientific discoveries. For full measure during this period Dr. Ferguson played a considerable part in the development of the sodium reduction method for titanium production.

The job of ICI research director is in some respects easier and in others more difficult than the corresponding position in many other firms. With ICI's research-minded board and management, the research director tends to have to be not only the chief supporter of research but also its chief critic. Dr. Ferguson's long and intimate experience of research and of the characteristics of researchers made him well fitted for the first of these roles, his unemotional and extremely logical mind for the second. Always friendly and courteous, he could put criticisms as well as congratulations across most effectively, usually spicing them with shafts of dry humour which have so often delighted his colleagues on the sixth floor at Millbank.

Dr. Ferguson has not disclosed what he intends to do in his retirement, but there has been mention of gardening and a greenhouse—and one might not be too far wrong in assuming that the greenhouse will become a laboratory for some form of biological research. Whatever he does, Dr. Ferguson will take with him, from many friends in ICI, very best wishes for a long, happy and healthy retirement and will leave behind him happy memories of a most friendly and co-operative colleague.



Most keen gardeners like to add two or three shrubs to their garden each year, possibly ones seen and admired during the previous spring, summer or autumn. They may be fruit trees or bushes. This reminds me that there are two new apples on the market which are proving very popular. I have had the opportunity of trying both these, and consider them well worth planting.

### Newer Apples

The first one is Scarlet Pimpernel, a late July and early August apple. As far back as I can remember the only two apples ripening as early as this are Irish Peach and Beauty of Bath, and my personal opinion is that Scarlet Pimpernel is far better than either of these. It is a large, conical-shaped fruit, crisp and beautifully coloured, and has a rather pleasant sharp flavour—a very refreshing apple to eat at this time of the year. Like other early ripening apples, it will of course not keep, and to have it at its best it should be eaten straight from the tree. This applies also to both Irish Peach and Beauty of Bath.

The second one is a much later apple, Red Ellison, and this I think is a fine apple which will become very popular. Again it is a crisp apple, with a very fine flavour and a rich crimson colour, with pale green or yellow under the crimson on one side of the fruit. If it is to be criticised at all, it is because it is rather large for a dessert apple.

Red Ellison is an October to November apple, and experiments are being carried out on its storage keeping qualities in both gas and cold storage. If it will keep and maintain its firmness until December or January it will be a fine market variety, certainly one which will catch the customer's eye. When I tried it I thought it an improvement on the better-known Ellison's Orange; I recommend it.

## Choosing Your Fruit Trees *By Percy Thrower*

November is the best month for planting all kinds of deciduous trees, shrubs and roses, and also for planting evergreens; but if it is not possible to plant the evergreens this month they will be the better for leaving until April or early May.

There are many people, possibly with new gardens, who will want to plant fruit trees and bushes, and while I maintain that November is the best time for planting them, the planting can continue right through until late March whenever the soil is not too wet and sticky.



*The author at work in his greenhouse*

If I were planning a new garden I would most certainly include a few fruit trees, apples and pears, as well as blackcurrants, raspberries and gooseberries. When purchasing these be sure to buy from a reputable firm, and with fruit trees buy the type of tree suitable for the position and space available.

It would be a waste of time and money to plant a large standard tree where it would eventually be overshadowing other plants you wish to grow, and it could be anything from five to eight years before a tree of this kind would begin to bear fruit.

The most suitable type of apple or pear

tree for the average garden is undoubtedly the cordon or small bush, and if this is ordered on the right kind of rootstock it will, in all probability, begin to bear fruit the second or third year after planting. It would be unfair to allow it to produce fruit the first year after planting. The best rootstocks for this kind of apple tree are either Malling type nine, which has a dwarfing effect on the tree and encourages early fruiting, or Malling type two, which is semi-dwarfing and also encourages reasonably early bearing. For pears the Quince A seems to be the best, and it is a wise policy to stipulate when ordering that your trees must be on a particular kind of rootstock.

Another important point to bear in mind when selecting varieties is that you have some which will flower at the same time and act as pollinators for each other.

### My Favourites

Some varieties of both apples and pears are self-sterile, and the flowers will not fertilize with their own pollen. The well-known Cox's Orange Pippin apple and the Doyenne du Comice pear are both such types and need other trees nearby for pollination purposes. Apart from the two new varieties of apples I would suggest Cox's Orange Pippin, James Grieve, Laxton's Superb and Lord Lambourne for dessert; Bramley's Seedling, Lane's Prince Albert, Peasgood's Nonsuch and Warner's King for cooking. When choosing varieties of pears I would place Doyenne du Comice first with Laxton's Superb for pollinating. Williams's Bon Chrétien is a good early pear, and one other must is Conference.

Of varieties of blackcurrants I prefer Boskoop Giant; of raspberries, Malling Promise and Malling Jewel; and gooseberries, Careless (green), Lancashire Lad (red) and Leveller (yellow).



# NEWS IN PICTURES

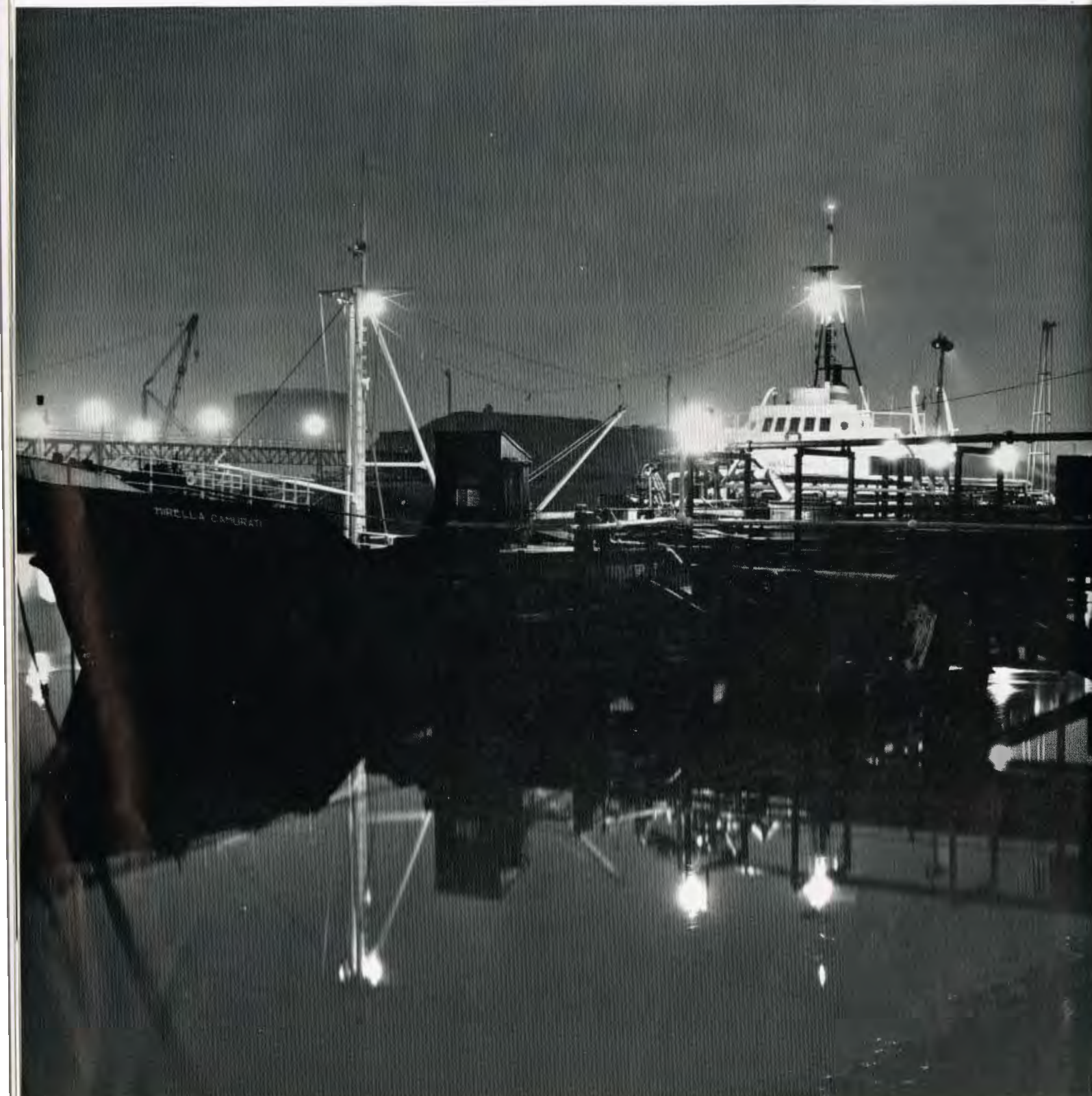


## Home and Overseas

**LEFT: Night scene at Billingham.** A tanker prepares to sail from the Tees with a cargo of plasticiser alcohols, which are made by Heavy Organic Chemicals Division at Billingham and sent all over the world for making pvc plasticisers. Typical applications for plasticised pvc are in raincoats and "leathercloth" upholstery and, industrially, as cable insulation and conveyor belting

**RIGHT, TOP AND CENTRE: ICSU reception.** The Chairman and directors invited members of the executive board and the bureau of the International Council of Scientific Unions to a reception at Imperial Chemical House during the ninth general assembly of ICSU, held in London at the end of September under the auspices of the Royal Society. *Above, right:* Mr. S. P. Chambers, ICI Chairman, in conversation with Professor H. J. Bhabha of Bombay, chairman of the Indian Atomic Energy Commission. Looking on are Lord Fleck, FRS, immediate past chairman of ICI, and Mrs. Chambers. *Middle, right:* Dr. Trevor Williams, editor of *Endeavour* (left), and Professor V. A. Ambertsumyan, the Russian astronomer

**BOTTOM, RIGHT: Nylon men celebrate.** Some of the guests at the first of three dinners for Dyestuffs Division employees at Wilton. The dinners were held to celebrate the establishment of the Wilton Nylon Plant and the start-up of extensions to the plant which should double the output of polymer by the end of the year. The nylon plants at Billingham and Wilton between them make a tenth of the world's nylon





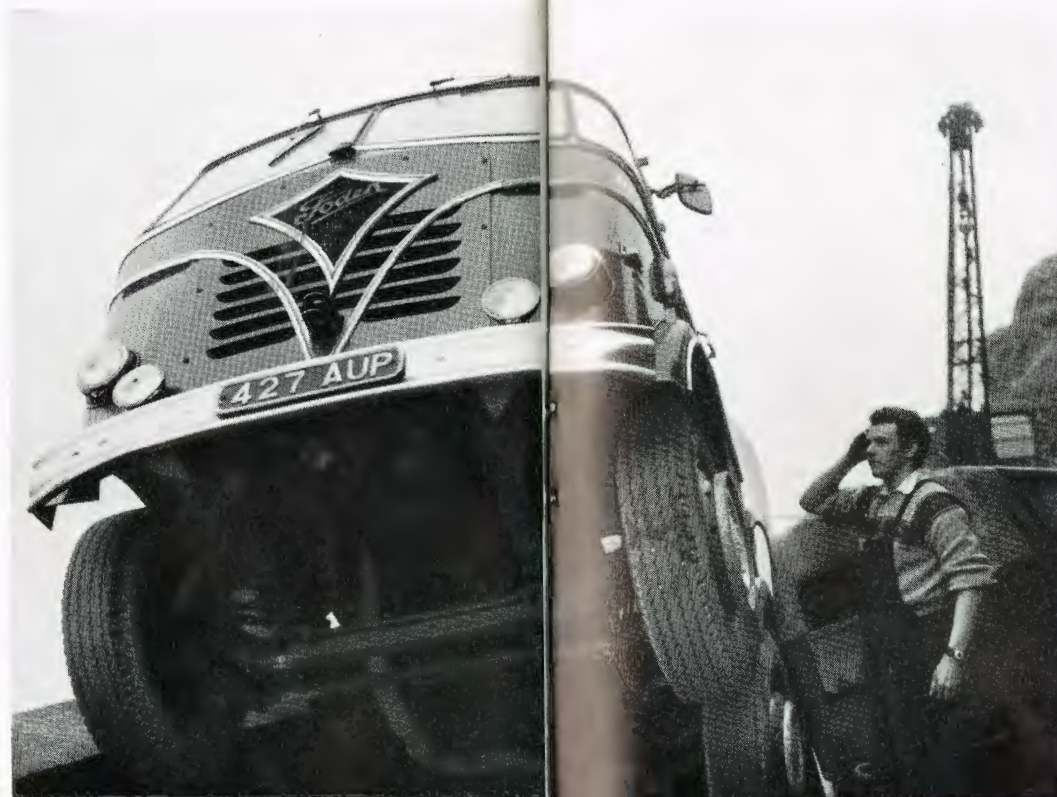


**Aussie ambassadors at Wilton.** A volunteer goes to the microphone in Wilton Works Piccadilly Restaurant during the visit of two Australian trade "ambassadors" to Wilton last month. Their visit was a very popular one, particularly as at their lunchtime talks they gave away prizes of Australian food and wine for correct answers in a quiz about Australia

**Explaining the layout.** Mr. Norman Langdale (*third from left*), director of practical training and placement at the new College of Engineering in Delhi, explains the layout of buildings and equipment to (*left to right*) Prof. Thacker, joint secretary, Ministry of Scientific and Cultural Affairs, Mr. R. N. Dogra, principal of the College, Lady Gore Booth, Sir Paul Gore Booth, High Commissioner for India, Mr. Phillips, personal assistant to the High Commissioner, and Mr. K. Chandieamahi, joint secretary, Ministry of Scientific Affairs. Mr. Langdale, former Wilton Education Officer, took up a two-year secondment with the Commonwealth Relations Office in April last year to assist in creating the new engineering college associated with the University of Delhi



**BELOW, LEFT: Cairngorm training course.** Six Nobel Division girls took part in the Cairngorm leadership training course for girls in industry arranged by the Scottish Industrial Sports Association in co-operation with the Scottish Council for Physical Recreation.



**Fire brigades competition.** Two ICI teams took part in the London finals of the Industrial Fire Protection Association's works fire brigades competition. Paints Division's Stowmarket Works team came third in the four-man light trailer pump drill, for which they were awarded the Liverpool Cup. On the table are other trophies won by teams from this brigade during the year. General Chemicals Division's Pilkington-Sullivan Works team competed in the four-man hydrant drill event



**BELOW: Harbour drama.** Driver Hollingsworth (Billingham Division) certainly has something to scratch his head about. This is what happened when the sea wall at Seaham Harbour collapsed as he was slowly reversing his 23-ton bulk cement tanker along it. The tanker was making a routine delivery of cement in bulk to a contractor employed on the construction of a new part of the wall. The sea wall at Seaham, showing the tanker half in and half out of the 15 ft. deep hole which opened up when the sea wall collapsed

**Prizewinning garden.** Lower Peover in Cheshire, proud of its nomination this year as "best-kept village," organised its own competition to find the best-kept garden in the best-kept village. The second prize went to an Alkali Division man, Mr. W. G. Cragg, a clerk in the Division's Estate Department, seen here with his wife



**Engineer honoured.** Mr. Cedric Flynn, a member of Wilton's Work Study Department and the man largely responsible for planning the factory's water and drainage network, has received a distinction comparatively rare in the chemical industry—election as a full member of the Institution of Civil Engineers. The honour was conferred on him almost 15 years to the day of his arrival at Wilton



**National bowls prize.** Four Ardeer Recreation Club women bowlers have won the Lord Inverclyde Memorial Trophy—the first national bowls prize ever to come to the club. Our picture shows the captain of the team, Mrs. A. Hillcoat, accepting the trophy from Mrs. R. S. Ferry, president of the Scottish Women's Bowling Association. The other members of the team are (*left to right*) Miss Northcote, Mrs. Hill and Mrs. Monro







# FOOTBALL FINANCE & THE FUTURE

by Denzil Batchelor

This is the crucial season. For the first time since the League was founded in 1888, professional footballers have been released from the control of their taskmasters of the Football League and can now negotiate their own contracts with no wage-ceiling forcibly imposed upon them. They can get what they are worth—or what their individual clubs consider they are worth. The footballer, in a word, enters (if not the Kingdom of Heaven) at least into the status of an individual, with a say in his own destiny. He has ceased to be a mere cipher in the only remaining slave market. That, according to the popular press, was the future that was about to open up last August.

As against this, it had to be admitted that before the New Dawn arrived there were no portents in the sky suggesting that it was likely to be pure gold. The number of spectators up to 1st November 1960 (when negotiations were on) had decreased by between one and a half and two millions as compared with the same period in 1958–59, gates varying from 650,000 to 900,000 a week as compared with the 800,000 to one million who watched League matches at the same period in 1949.

Would the game be able to afford to pay the new wages? Would there be room in the game for the marginal player, the





team man, once the star had received his cut? We knew that, at 1st January 1958, only twelve players (all of them First Division) earned between £1000 and £1100 a year; none earned more. A year later 356 players were in this bracket. At 1st January 1960 the total had fallen to 322, though another 295 earned £1100 a year or more.

Today it is computed that there are between fifty and a hundred players whose contracts to their League clubs could bring them in at least £2000. (The figures quoted take no account of benefits, fees for international matches, or money paid out by provident funds.) Among these latter-day plutocrats, Johnny Haynes, captain of England and Fulham, comes first. Phil Woosnam, ex-amateur and star of West Ham and Wales, is probably the second-ranked money spinner; inspired guessing puts his salary at £75 a week. George Eastham of Arsenal is believed to earn at least £50 a week; and Laurie Brown, an ex-amateur and now of Arsenal, draws £40 a week—double what he got when he played for Northampton. There are plenty of other First Division players who make from £30 to £35 a week, with an extra £10 when they appear in the first team—which is by no means always.

Well, it seems as if the stars (between fifty and a hundred of them) are all right, Jack. What about the little man of football? By the agreement reached between the League and the Professional Footballers Association on 18th January 1961, minimum wages are fixed at £15 a week in Division 1, decreasing by Divisions by £1 a week down to Division 4. There were plenty who said that the clubs would find it possible to pay the stars (there is always enough money for them), but not to engage adequate supporting casts.

#### Fewer Players

Well, the managers went to work. They knew (or thought they knew) how much money the club would make in the first season of the New Deal, they deducted the stars' wages, and cut up the rest of the cake as far as it could be stretched. There were 1935 players on the League payrolls on 1st January 1960: it is thought that there are between 500 and 750 fewer today.

Now the loss to the game of these players may well be a serious thing. There are some who declare that a youngster of 20 may have shown too little form to warrant his remaining on the payroll—but if there *was* the money to persevere with him, you might find that in five years' time, instead of being lost to the game, he had developed into another Haynes or Woosnam.

Anyway, with reduced forces the clubs embarked on the new season. The great question was, would the crowds pass through the turnstiles in sufficient numbers to justify the extra cost of League football? Judging from the first five weeks of the season, the omens were that they would. At this point it was remarked that attendances were slightly up on last year's figures over the same period—suggesting that if the average increases were maintained they would be up by three-quarters of a million at the season's end.

But the really remarkable thing was where the improvement in gates was to be found. Attendances at First Division matches, in which the stars figured, were *down*; attendances at Second and Third Division games were *up*. Was it possible that after all the public was less interested in gloating and doting over stars than in watching hard-fought games of football?

But at this point the doubt arises whether the season is really

the start of a new epoch, or does it merely mark a transient stage in the development of football?

The question that still remains is whether the League programme must be the quintessence of the game in England. There was a time when it was unquestioningly accepted as the beginning and end of spectators' needs. That time is long past. The influx in recent years of extra-League events has almost eclipsed the importance of the premier competition. There is the European Champions' Cup; the Inter-Cities Fairs Cup; the Cup for European Cup winners—and of course the FA Cup and the comparatively new home-and-away League Cup. Compared with these competitions, each made more dazzling by the excitement of a knock-out finish instead of a points victory, the dullness of the long-drawn-out League programme becomes ever more obvious.

#### Not Good Enough

Let us assume you live in the big industrial centre of Potchester, and your sole winter interest is the performance of Potchester United in the Second Division. By mid-January you see your side knocked out of the FA Cup in the Third Round and solidly placed as tenth in the League table. It's virtually certain that they can't go up, and they won't go down. What the devil does it matter *what* they do? You have three and a half months of the season left to be bored with. It's not good enough—and it is your money at the turnstile that keeps the United going and the Football League in existence.

What do we need? Nearly everybody thinks a smaller League programme is due. The iconoclasts would like to see the top ten teams go up, the bottom ten go down, but this plan is not, and never has been, within the realm of practical politics. Johnny Haynes, England's captain, tells me he thinks the present system of two promotions and two demotions is satisfactory, but he would be quite happy to see the number increased to four up and four down for a trial period.

It is educative to listen to Haynes's comments on the talking-points at present being aired, for he is, of course, a focal point, perhaps a father figure, in this new season—the first year of the Emancipated Footballer. He has accepted wages of £5000 a year from Fulham: "at least, that's what the Press tells me, and we can't argue with them," he assures me with a grin that is eloquent enough in its way. He was, of course, approached by Italian clubs. "The reason players accept their offers is the big lump sum they get for signing on. I weighed that against my increased wages—and stayed with Fulham."

#### A Hard Life

Well, the signing-on fee may be £15,000 or £20,000. "You must expect a hard life for that sort of money," remarks Haynes: and he is right. Jimmy Greaves has undoubtedly encountered a remorseless discipline and perhaps cold-shouldering by Italian colleagues who resent an outsider making so much more out of the game than they themselves do. John Charles has earned the lump sum paid down for him. It looks as if Denis Law, late of Manchester City, might follow his example. Greaves's future is, at the time of writing, obscure.

But Haynes, in spite of all temptations, remains an Englishman. Well, it was a London manager who told me fifteen years ago that he was opposed to the policy of no-ceiling wages, because players wouldn't pass to a star making thrice as much



Johnny Haynes, captain of England and Fulham, the highest-paid footballer in England

as themselves: "Let him find his own openings—I'll have a shot for myself; and if I pull it off, I'll be nearer *his* pay."

Haynes's comment is: "Real Madrid proved this didn't happen in real life. So have the great Italian teams. And it certainly doesn't happen here. I don't know what the rest of the boys get—they don't know what I get: and we play as a team. The fact is, we all enjoy playing the game and giving of our best."

#### Most Unselfish Player

There isn't the slightest doubt that this is the way it has worked out for Haynes, though it must never be forgotten that he is the most unselfish player in football—his entire game consists in making openings for other players' scoring shots. Yet Fulham is one of the clubs hit by the no-ceiling wage policy. Twelve players have not been re-signed. The club now fields three teams instead of four: the side that used to play in the Metropolitan League no longer exists. As a Fulham man put it to me: "I said to the boys: 'You've been paying your subscription to the Association to make yourself unemployed. Next year when you come out of the pits, having earned your fifteen quid in a week, you'll have the satisfaction of knowing that it was your subscriptions that gave the stars a hundred quid a week.'"

Against this line of argument Haynes points out that many of those who have not been re-signed with League clubs are still in football as professionals with other teams. This is indubitably true: players like Milburn, Ditchburn, Froggatt and Pye are making more money with the Southern League than they would have earned if they had stayed on as ageing "supers" with their Football League clubs. Milburn, once the cup-winning star of Newcastle United, is probably paid five times as much as player-manager of Yiewsley as he would have got from his old club.

There's another point. "If a player hasn't got himself into his club's first team by the time he's 20 or 21," says Haynes, himself 27 and hoping for eight more seasons in the game, "he's probably better off in some job other than professional football."

It occurred to me that the future activities of the Professional Footballers Association might well be devoted to bolstering the



Phil Woosnam, ex-amateur and star of West Ham and Wales, probably second highest paid. Inspired guess—£75 per week

thirty-five years of retirement of the man who was once the hero of the terraces before speedily fading into oblivion. (It is always being stressed that a footballer is an entertainer: and in England entertainers—but not footballers—become more and more popular till after they are due for the Old-Age Pension.) But Haynes isn't perturbed. "If a player is wise, he'll have put by enough by the time he retires to launch himself in business," he points out. He may even do so, with his club's permission, while still a player: Haynes himself failed to earn the Football Association's approval to operate as a bookmaker, but he now has business interests in advertising and in the sale of football boots.

So Haynes isn't worried about the future, although, perhaps remembering the injury that put his great friend Bedford Jezzard out of active participation in the game, he admits on the breath of a sigh: "Of course, you never know. . . ."

#### Eye of a Realist

But meanwhile he views the football of today with the falcon's eye of a realist. For example, what about Sir Stanley Rous's dream of a Super League, consisting of one club team from each of the leading sixteen football-playing nations? "I'm afraid I've never seriously thought about it," he admits with a grin. "You see, it wouldn't—by any stretch of the imagination—be Fulham." Meanwhile, he doesn't find the League programme too long—"It's the backbone of our football season," he says.

He likes the plan, of which Swindon Town was a pioneer (when their gates were around 8000), of bonuses as rewards for achievement. There was, as Swindon planned it, extra money for teams for every thousand spectators drawn by the players over 12,000. "Many teams follow the plan now," says Haynes. "I like it—it rewards initiative."

With eleven Hayneses on the playing strength we should win the next World Cup: with half a dozen among the top brass of Association and League our football would run till the end of the century without a strike or a headache. I'm glad he's saved to English football, and consider he deserves to retire as a rich man in 1969.



# S U M O

**... the magic word that in Tokyo draws a cup final crowd. It is a clash between two grotesque giants, all over in a few seconds and wrapped up in an Eastern mystique**

**By F. J. Siddle**

**Y**ou may think that Japanese wrestling is judo, the "soft" art of self-defence by which exercise gently nurtured young women can save themselves, if they so wish, from a fate worse than death. Or, if you have once visited Japan and so become an expert on life in the Far East, you would certainly include karate, also described as an art of self-defence but which is the purest and most perfect form of unarmed mayhem ever conceived by man. Both these skills are similar in that they demand intense mental concentration, superb muscular control and speed, coupled with a certain mystique which makes it easy to fit them into the same pattern of living which produces an art of archery, swordsmanship, flower arrangement and tea-drinking.

Do thousands of Nipponese rush to see demonstrations of these skills? Not on your life! Sumo is Japanese wrestling. Sumo draws the crowds. When I last visited Tokyo I expressed a wish to see sumo. Although this was much the same as asking for a cup-final ticket on the day before the match, somehow it was fixed.

Six grand tournaments of sumo are held each year, three in Tokyo. Each tournament lasts fifteen days, each wrestler fights once each day with different opponents, and the Emperor's Cup goes to the contestant who finishes with most gains over losses. In Tokyo the fights are held at the huge Kokugikan building, which holds over 15,000 people. Every seat is taken all day and every day. Whole families and parties camp in cubicles surrounding the ring, and there are steeply ascending tiers of gallery seats. Eating and drinking go on all day, attendants continually passing with packed meals and bottles of beer. There is much noise and laughter and a general atmosphere quite alien to any preconceived ideas you may have about the impenetrable, unemotional East.



ABOVE: The two mountains of flesh clash in the centre of the ring  
OPPOSITE: Sumo wrestlers are giants, six to seven feet tall and weighing around 20 stone





*This huge stadium in Tokyo holds over 15,000 people*



*The fight is lost if you touch the floor with any part of your anatomy other than your feet*

In the centre of this sea of people is a 15 ft. ring enclosed in what looks like a four-poster bed but actually represents the canopy of a Shinto shrine. A sumo bout is decided by a contestant being thrown out of the ring or touching the ring floor with any part of his anatomy other than his feet. Unlike Western wrestling, striking with the fist or forearm, kicking in the stomach and garrotting are forbidden.

Sumo wrestlers are giants, 6-7 ft. in height and weighing around 20 stone. They fight naked except for a teenage pony tail and a loincloth which is ten yards long and is wrapped round the waist from three to seven times, depending on the girth of the wrestlers. These wrestlers are quite monstrous. I was told that bulk is achieved by strict attention to diet. I was also told that the very beautiful and very expensive ceremonial aprons worn in pre-fight parades are usually provided by a patroness.

There is a referee, a very colourful individual who introduces the contestants by name. These names are chosen by the wrestlers themselves and, I thought, not always happily, as it is difficult to associate a 23 stone giant with the appellation "Flower of Youth." The referee starts the contest by a flick of his fan and demonstrates his impartiality by shouting words of encouragement to both fighters.

Don't get the idea that once the referee flicks his fan two giants precipitate themselves at each other and a homeric battle starts. They first go through a ceremonial drill. They rinse their mouths with water to cleanse mind and body, they wipe their bodies with paper towels, they extend their arms with open palms to demonstrate freedom from weapons, and as a climax raise one leg high in the air in a peculiar frog-like action, balance awhile, and then bring it down with a resounding crash on the floor of the ring. This is to drive out evil. Each wrestler then goes to his corner, picks up a handful of salt and scatters this over the ring in order to purify it. The wrestlers then squat and face each other in the centre of the ring, crouch forward in a "get set" position with enormous backsides stuck up into the air and glare at each other.

At this stage, I thought, at last something will happen, but they were just kidding. Back to the corners for more salt, more scattering, more glaring, more salt, and so on again and again, usually for the full four minutes allowed by the rules. Until recently the start of a match could be delayed indefinitely. The spectators get worked up to a high pitch of excitement, shouting encouragement and abuse. Then from the crouching position, at a moment when they are both possessed by "it," the two mountains of flesh clash in the centre of the ring, grasp each other, and either twist about with great agility or stand immobile, straining stomach to stomach until one crashes to the clay or is heaved out of the ring.

It is all over in a few seconds. The loser bows to the winner, the winner bows to the referee. Then the whole business starts again with a fresh pair of contestants.

To me, the first few matches were interesting. No doubt the experts could spot which of the forty-eight classical throws were used, but I could see only two or three variations. There must be some significance in sumo, and there is no doubt quite a literature—probably Teutonic—on the subject which explains everything. When I came away my main thought was that for an oldish middle-aged type I was, compared to the sumo, quite slim, and when I got home I would tell my wife so.



*ABOVE: Wrestlers waiting to fight watch bouts from the ringside*

*BELOW: The referee starts the contest by a flick of his fan and demonstrates his impartiality by shouting words of encouragement to both fighters*







*"Autumn Silhouette"*

*Photo by Harry E. White (Bellingham Division)*